

Federation of Earth Science Information Partners Partnership Application

Please complete all sections to the fullest extent possible and forward completed application to: Carol Meyer, carol.meyer@earthsciencefoundation.org. If you have any questions, please contact her at 877.870.3747.

I. CONTACT INFORMATION

A. Primary Contact/Principal Investigator

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B. Designated Assembly Representative (could be same as above)

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C. Other Contacts

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II. ABOUT YOUR ORGANIZATION

A. ORGANIZATION/DIVISION/PROJECT NAME:

Science Education Resource Center at Carleton College

B. OVERVIEW OF YOUR PRIMARY ACTIVITIES (250 words or less)

The Science Education Resource Center (SERC) works to improve undergraduate Science, Technology, Engineering, and Mathematics (STEM) education through projects that support educators. An office of Carleton College, our work is funded primarily through National Science Foundation grants. The office has special expertise in effective pedagogies, geoscience education, community organization, workshop leadership, digital libraries, website development and program and website evaluation.

C. Please list and briefly describe the primary product(s) or service(s) that your organization provides (will provide) to the community.

SERC's services to the education community lie in four primary areas:

* Faculty Professional Development: Through projects such as On the Cutting Edge and Starting Point: Teaching Introductory Geoscience, SERC and its collaborators have offered a wide range of professional development opportunities for educators to stay up to date on geoscience content and pedagogy. Now we are bringing similar opportunities to the STEM educational community more broadly through projects such as the SERC Pedagogic Service and Microbial Life Educational Resources.

* Bringing Science into Broader Use: Together with our partners, we develop innovative resources that bring scientific research into use in education and by the public. Our staff has put together collections relating to geohazards such as tsunamis and hurricanes as well as other resources for teaching with visualizations. We also play a supporting role in projects such as the Earth Exploration Toolbook, Integrating Research and Education, and Microbial Life Education Resources which assist high school and college teachers in using scientific data and research results in their teaching.

* Community Visioning: Bringing groups of people together around particular issues to find consensus and a shared vision of future activity has become a particular strength for SERC. Initiated with our work in the geosciences (see, for example, Building Strong Geoscience Departments), these skills are increasingly being brought to bear on more generalized issues in STEM education (see, for example, Using Data in the Classroom, Reconsidering the Textbook).

* Research on Learning: SERC is engaged in research projects that seek to develop a stronger understanding of student learning in geoscience and STEM courses as well as how faculty learn about pedagogical practices. Projects such as Bringing Research on Learning to the Geosciences and Cutting Edge: Observing and Assessing Student Learning bring together experts in the cognitive and learning sciences with educators with "front line" experience.

D. Please give a main website address for the proposed Partnership:

Web Address: <http://serc.carleton.edu/>

III. HOW YOUR ORGANIZATION WILL BENEFIT FROM/CONTRIBUTE TO THE EARTH SCIENCE INFORMATION PARTNERS (ESIP) FEDERATION

- A. Describe current or anticipated users of your products and services and how you think the Federation can help you better serve this population. (200 words or less)

SERC and the partner project websites are key resources for the earth science education community. Over 25% of geoscience faculty in the US use the SERC website. With over 1.2 million visitors in 2006 our users also include Earth science teachers, faculty and educators in other STEM disciplines, students and the general public. The use of earth science data is an important theme in many of our websites and is particularly highlighted in the popular Using Data in the Classroom portal. Partnering with ESIP we would like to increase the role of ESIP data in our websites and the interaction of our users with ESIP and its data products. Together we believe that we can play a key role in increasing the visibility and use of Earth Science data in education.

- B. Describe any Earth science technologies that you have developed and are willing to bring to the Federation's efforts to provide best-practices. (200 words or less)

In addition to bringing our expertise in reaching Earth science educators to the Federation generically we have a number of models for communicating the importance of and fostering the use of data in education. In particular our model for educator friendly DataSheets provides a template for integrating information from scientist-oriented data providers into the education mainstream. The DataSheets model builds on extensive community work in identifying the key barriers to educational reuse of data.

SERC has developed a web-based content management system that enables the creation of easily navigated collections and websites through widespread community contribution. As part of a collaborative project, this technology might be valuable in engaging the ESIP community in creating DataSheets, Earth Exploration Toolbook chapters, and other structured web pages that highlight the educational use of ESIP data.

- C. Describe how your proposed membership would contribute to the efforts and the mission of one or more standing committees, working groups and/or clusters. See Page 3 for descriptions of the different activities of the various standing committees, working groups, and clusters. (200 words or less)

SERC is well positioned to support the mission of the ESIP Education standing committee. SERC has substantial expertise in professional development for undergraduate faculty, in the presentation and distribution of teaching materials and professional development resources via the web, in the community generation of standardized formats for resource presentation, and in the creation of web-networks that promote use while reducing redundancy. SERC operates a well-developed digital library created through the work of 15 partnering projects that integrates effective pedagogies with relevant geoscience teaching activities.

- D. Describe your own use of Earth science information and data and how you would see this use enhanced by your partnership in the Federation. (200 words or less)

Earth Science information and data is a cornerstone in the education resources we provide throughout our site. For example our Using Data in the Classroom portal and Cutting Edge Visualization Collection each provide an educator-friendly view into the range of data and visualization resources available on the web. These existing collections draw heavily from information held by Federation members. We anticipate that our partnership in the Federation will increase our knowledge of valuable Earth Science information and data that should be highlighted. However, we anticipate that an even more valuable result will be new ideas arising through interaction with ESIP partners for ways in which we can work together to bring their information and data into widespread use in education.

IV. YOUR CHOICE OF MEMBERSHIP TYPE. PLEASE PICK ONE.

ESIP-I (primarily a data archive center)



ESIP-II (primarily a research center)



ESIP-III (primarily applications and education)

X

ESIP-IV (primarily a sponsoring member)



V. Any other comments about your proposed membership and its relation to the Federation that you wish to provide.

Thank you for your application for partnership in the ESIP Federation.

List of Federation Committees and Clusters

Administrative Committees

Executive Committee: Comprised of all standing and administrative committee chairs, ESIP Type Representatives, the President and Vice President of the Federation. Oversight body for most day-to-day activities of the Federation, acts on behalf of the Assembly between meetings.

Constitution and Bylaws: Provides counsel on matters related to the constitution and bylaws and other related issues (e.g. amendments to government documents)

Finance and Appropriations: Oversees financial resources of the Federation, including the annual budgeting process.

Partnership: Reviews and processes all applications for membership before making applications available for review by members of the Federation. Deals with other membership-related issues.

Standing Committees:

Commercial Development: Promotes a forum wherein commercial development of Earth science information can be fostered.

Community Engagement: Provides a forum for the Federation to promote partner products and to engage new users for data products and services.

Education: Provides a forum to make accessible to educators and learners at all levels in both formal and informal educational contexts the Earth science data, information, tools, and curricula available within the ESIP Federation.

Information Technology and Interoperability: Provides a forum for discussing information technology and interoperability issues of the Earth science community and serves as a central point for activities in this realm.

Products and Services: Provides a forum for defining best practices and defining requirements for earth science products and services. Currently is involved in developing an inventory of partner products and services.

Clusters (presently active, April 2005):

GIS

Intelligent Systems

Air Quality